

Public engagement and communication: who is in charge?

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The discovery of CRISPR has led to the development of gene drive systems that could be used to spread desired traits in a target species or to exterminate a population within a few generations. It is no surprise then that such a controversial and disruptive technology has raised hopes and fears regarding its application for public health, conservation, or agriculture. It has even prompted a call for a moratorium on genetically engineered gene drive last year that was signed by about 160 organizations (<http://www.synbiowatch.org/gene-drives/gene-drives-moratorium/>). In reaction to this call, an open letter was addressed to the Parties to the 13th meeting on the Convention on Biological Diversity (CBD) in December 2016 in Mexico and the Cartagena Protocol on Biosafety, requesting support on gene drive research. Interestingly, this call was presented on the website of Target Malaria (<http://targetmalaria.org/open-letter/>), a consortium that is developing a gene drive approach to suppress the populations of mosquito malaria vectors. About 80 scientists, most of whom are involved in insect research and malaria control, have signed this open letter. At the end, the call for a moratorium was rejected at the UN meeting in Mexico [1]. These conflicting views highlight the importance of public engagement and communication on the use of gene drive; indeed, many papers have been published discussing ways of engaging the public, the research community, and stakeholders [2,3].

When it comes to questions about CRISPR/Cas-9 technology and gene drive, who should and who could be in charge of communicating with the public? Who is sufficiently legitimate to organize genuine public debate? The developers and users of the technology are certainly

experts, but they could raise suspicions of conflict of interest. Instead, independent national or international academic or public health organizations could organize a debate so as to avoid such issues. Since one of the potential applications of gene drive is the control of vector-borne diseases, it is reasonable to imagine the WHO as a legitimate institution being in charge of this task. Given the related ethical, legal, social, and ecological issues, it could also work in partnership with other UN bodies such as UNESCO or the UN Environmental Programme to present the benefits and risks of the technology.

Several consultative meetings on gene drive technology have already been co-organized by the International Life Sciences Institute (ILSI), the New Partnership for Africa's Development (NEPAD), and the Foundation for the National Institutes of Health (FNIH). In addition to various meetings in the USA [4,5], various workshops have also been organized in Africa [6].

However, the involvement of ILSI in organizing these meetings on gene drive technology could be seen as problematic, given the funding and history of this organization. ILSI describes itself as a non-profit organization that provides science to improve human health and safeguard the environment, but a considerable fraction of its budget comes from chemical and pharmaceutical corporations, including BASF, Coca-Cola, Monsanto, Nestlé, and Syngenta—in 2014, 39% of ILSI's budget came from the private sector. Bayer, Dupont, and Monsanto have already signed license agreements with biotech companies to use the CRISPR/Cas-9 technology, albeit there are restrictions concerning the use of gene drive [7,8].

The history of ILSI is also loaded after the WHO banned the organization from

direct involvement in its activities in 2006 [9]. More recently, ILSI has also been at the center of a controversial decision concerning the glyphosate cancer risk by a joint FAO/WHO meeting [10]: The meeting chair was vice president of the ILSI Europe and the co-chair a board member of the ILSI's Health and Environmental Services Institute. In Europe, ILSI has also made some headlines. In 2010, the chair of EFSA's management board, Diána Bánáti, was forced to resign over conflict of interests as she failed to mention that she was also on the board of ILSI while ILSI was lobbying for promotion of GM crops in the EU. Clearly tight links with ILSI is problematic at the EU level as it was earlier for the WHO and this does not help building trust. Given the organization's links with companies that are interested in gene drive for crop or pest control in agriculture, ILSI's involvement in coordinating workshops on gene drive in Africa might raise questions about conflict of interests and highlights the need for independent public institutions and academics to become involved in the debate. There is a risk that promoting the use of gene drive to achieve public health goals will be considered as a Trojan horse for agribusiness companies. Independent non-profit organizations dedicated to addressing health emergencies or hunger relief should also examine independently the risks and benefits of getting associated with companies or institutions that inevitably pursue their own interests.

When developing new tools with potentially drastic implications, be it for the control of agricultural pests or vector-borne diseases, public interests should come before private benefits. Moreover, the value of scientific advice is intrinsically linked to

public trust in academic science and institutions. Given the different positions on gene drive applications between environmentalists, biotechnology companies, and lobby groups, it is essential that scientists need to know who speaks for whom in this debate and with whom they are getting involved. Independence and integrity are a low price to pay to make sure that public engagement and communication is not perceived as propaganda.

References

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